2-1925

Household Pests

A. L. Ford

Extension Circular No. 222

Home Extension Demonstration Series. First Year -- Ninth Meeting.

HOUSEHOLD PESTS

By

A. L. Ford
Extension Specialist in Entomology and Horticulture

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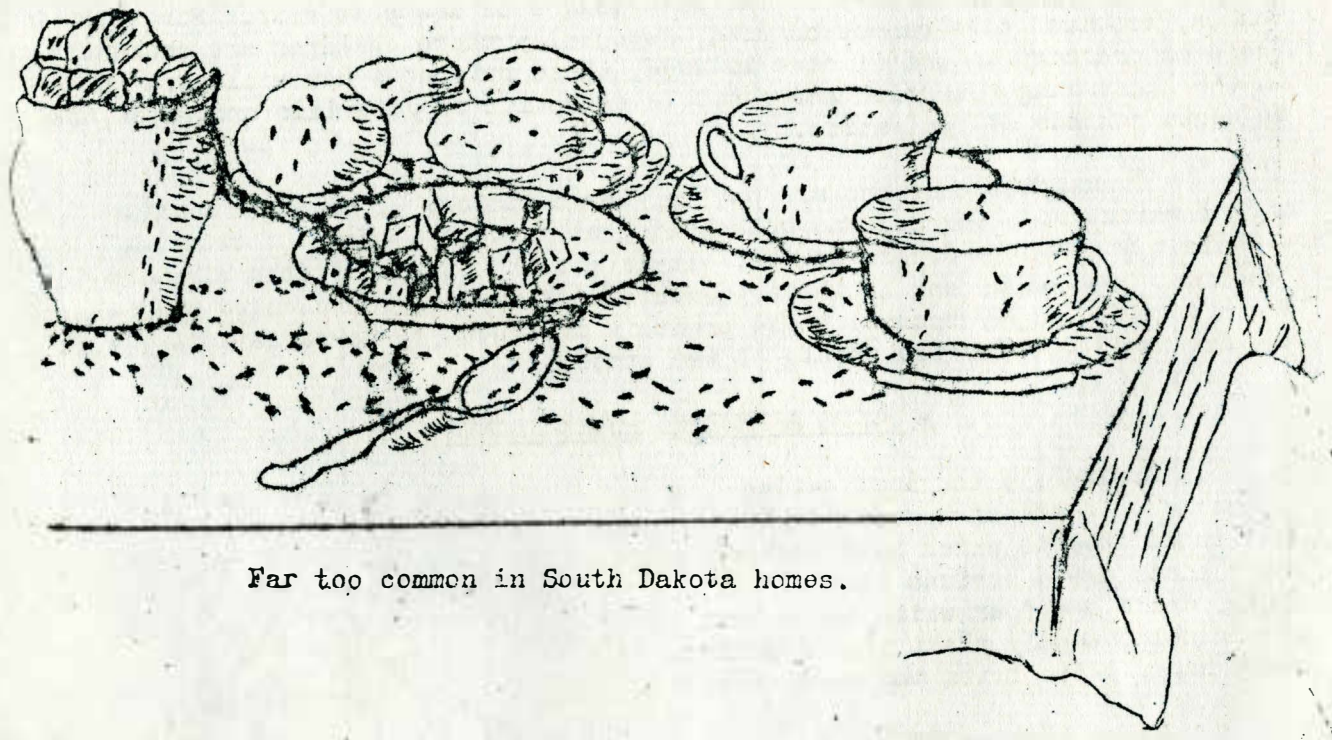
Household insects and similar pests are attracting more and more attention each year. Housewives are more strongly convinced than ever that these pests are not to be neglected, but must be treated as a dangerous and serious problem. Many of these home invading pests either completely consume or render our foods unfit for human use. Others destroy our clothing. Some are just simply nuisances around the house. The most dangerous group, however,



Far too common in South Dakota homes.

is composed of those pests which carry and spread human diseases.

The purpose of this circular is to present to the housewives of South Dakota what have been found to be the most effective methods of combating some of our more common household pests. In order to intelligently apply

Cooperative Extension Work in Agriculture and Home Economics, W. F. Kumlien, Director, Distributed in furtherance of Acts of Congress of May 8 and June 30, 1914.

the various methods of control, the more important points concerning the habits of these insects will be included. This circular should be kept in the house and referred to when the household pests present a problem which the housewife cannot solve.

Only control measures which are absolutely practical are included in this circular. It includes only control measures which the average person can apply without an unreasonable amount of work and expense. Far too many of the recommendations which we see in print are much too complicated and expensive for most of us to use.

It is not the purpose of this circular to include all of the household pests which occur in South Dakota. Space would not permit this. Only the more common pests are included. In case a person is having trouble with a pest which is not included in this circular, that person should feel free to write to the Extension Service at State College, Brookings, South Dakota, for information. Everything possible will be done to send information that will help control the pest in question. In writing for such information a number of specimens of the pest, together with a sample of the injury it is doing, should accompany the letter.

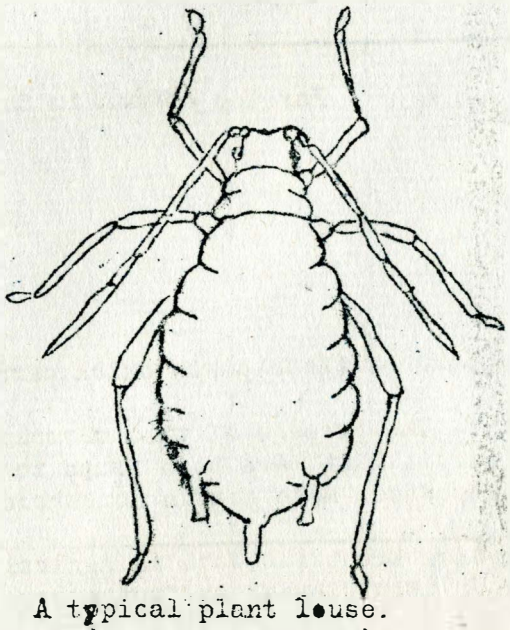
In applying the remedies recommended in this circular it should at all times be remembered many of the materials used are poisonous. For this reason, too much care cannot be used, especially where children are present. Where an ordinary amount of care is used, these poisonous materials are not in the least dangerous with the possible exception of materials and gases used in certain kinds of fumigation.

Commercial concerns are putting large numbers of products on the market which are being sold as household pest remedies. Many of these do excellent work while others do not. It is not the intent of this circular to recommend or condemn any of these products. If any are recommended and others are not it is simply because these products are known to do satisfactory work and are available for the people of the state.

- PESTS AFFECTING HOUSE PLANTS -

Ordinarily the leaf eating insects do not affect household plants. Only those insects which have sucking mouth parts are a serious factor. Of these, there are four which cause most of the trouble, namely plant lice (aphids), mealy bugs, white flies and scale insects.

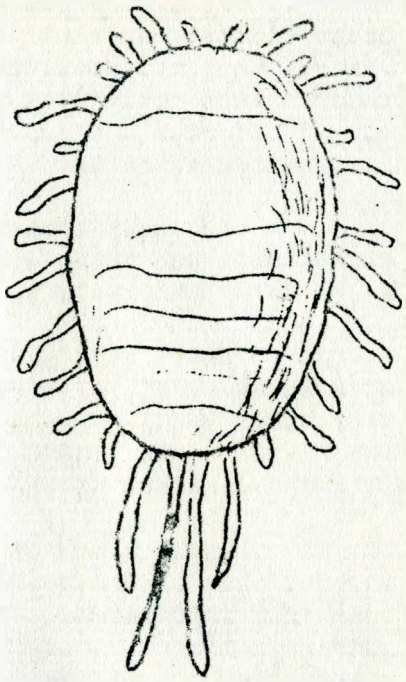
Plant Lice -- These are the small green, black or brown insects that are found on terminal stems. They cause the leaves to curl, wither and die. It is impossible to kill them with a poisonous spray as they suck their food from the inner tissues of the plant. Black Leaf 40, a nicotine preparation, is the best spray to use. The spray solution is made by diluting from one to two teaspoonfuls of the concentrated solution in each gallon of soft water. A small amount



A typical plant louse. (Greatly enlarged)

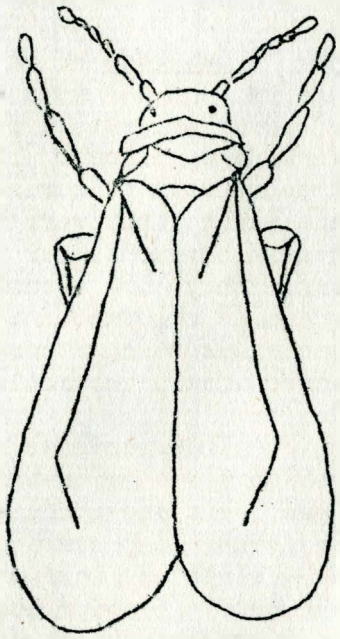
of laundry soap should be dissolved in this solution. This is a contact spray, that is it kills through touch. It must, therefore, actually hit the insects in order to kill them. It may be applied in two ways in case of potted house plants. It may be sprayed over the entire plant or the plant may be actually dipped into a pail of the solution.

Mealy Bugs -- Mealy bugs may be readily recognized by their distinct white powdery appearance. This is also a sucking insect but cannot be controlled by a spray of black leaf 40 as is true with the plant lice. The spray will not penetrate the waxy powder which the insect secretes. It has been found that nicotine oleate will control this pest very satisfactory. This solution dissolves the wax allowing the nicotine to come in direct contact with the pest, causing it's death. Nicotine oleate can be made by mixing ten parts of 40% free nicotine with 7 parts of oleic acid. The result is a thick salve-like material. Two tablespoonfuls of this material is used in each gallon of soft water. The plants are either sprayed or dipped in this solution.



A Mealy Bug
(Greatly enlarged)

White Flies -- White flies seem to be on the increase. Many housewives are complaining about this pest during the past few months. White flies may be known by their white floury appearance. The adult four winged flies are about one sixteenth of an inch in length and are very active. The greenish larvae are rather inconspicuous. This insect sucks the juices from the foliage of houseplants, causing it to turn yellow and die.



An adult White fly.
(Greatly enlarged)

Scale Insects -- Scale insects cause considerable injury to house plants, especially to ferns. There are several kinds of scales but in general they are stationary and have the appearance of small, usually dark colored (not always) elevated spots on the leaves or stems. When these are picked off with a sharp instrument it can be readily seen that they are an external parasite on the plant.

In general there are two kinds of scale insects, namely those with a soft and those with a hard shell. These two groups can be distinguished by pressing the shell with a pin or needle.

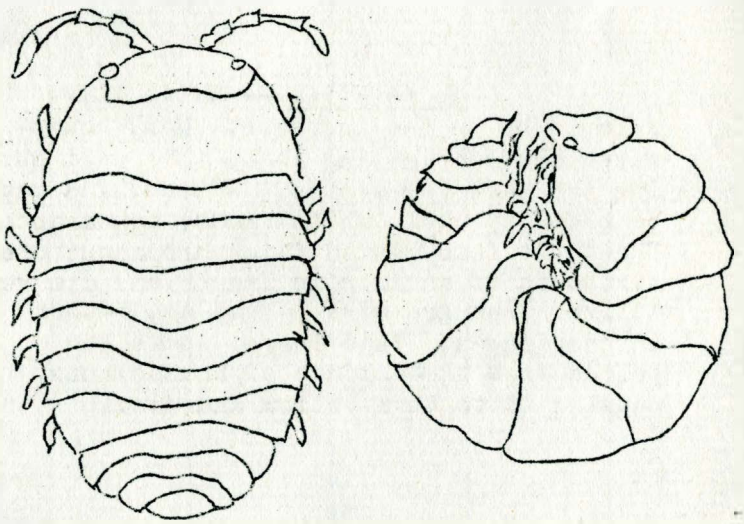
Where soft bodied scales are causing trouble they can be controlled by a spray or dip of nicotine oleate, as in case of the mealy bugs. Where hard shelled scales are present any spray or dip strong enough to kill the scales would also be very apt to injure the plant. In this case, the infested portions of the plant should be pruned out and burned.

Angle worms often cause trouble with potted house plants. Of course, this can be avoided when the plants are potted by using earth that is free from this animal. When these worms are present in the pots in serious numbers a liberal application of lime on the surface followed by a heavy watering of the plants will bring them to the surface where they can be easily removed.

In the fall of the year, when plants are being brought inside for the winter each plant should be carefully examined for insect pests. Any plants that are found to be infested should be discarded or treated before they are placed inside. One infested plant in the house in the fall very often means a hundred per cent infestation before spring.

Sow Bugs -- At times sow bugs become a serious household pest, especially in dark, damp places. They have been known to seriously damage plants that were being stored in basements for the winter. They also occasionally damage vegetables in storage, besides being a general nuisance around the cellar.

These animals can be poisoned with a bait made as follows: Mix one ounce of Paris Green through one quart of wheat bran. Dilute one half cup syrup in one quart of water and moisten the poisoned bran with this sweetened solution. Scatter this bait in places frequented by this pest. A similar poisoned bait can be made by mixing two parts of flour and one part of Paris Green. This bait can be applied in the same manner as the poisoned bait mentioned above.

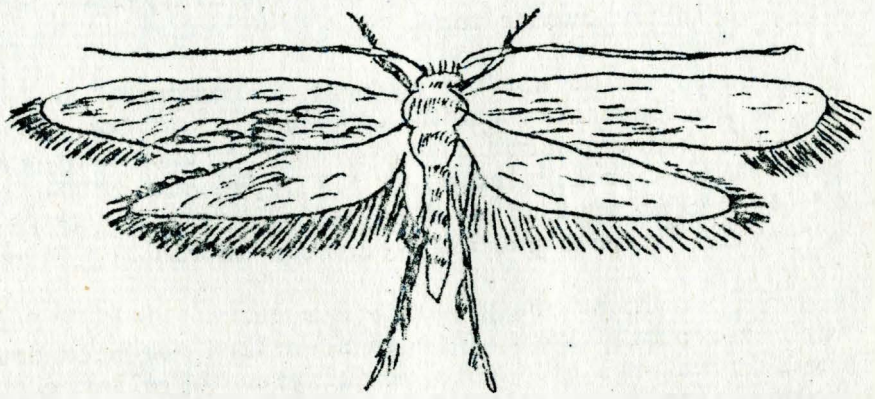


Sow bugs
(Greatly enlarged)

- CLOTHES MOTHS -

Clothes moths are constantly increasing in seriousness in South Dakota homes. Woolens, silks and fur are always in danger of being either partially or totally ruined.

Everyone is more or less familiar with the moths and the damage the larvae do. It, therefore, is not necessary to go into detail concerning the description of this pest.



Adult Clothes Moth
(greatly enlarged)

Clothes moths, when present over the entire house, are extremely difficult to control without fumigation. In most cases it takes continued effort to produce a complete cleanup. It is a well known fact that woolen or silk garments which are seldom worn are much more susceptible to clothes moth injury than those which are worn regularly. It is the seldom used articles stored in dark out of the way places that are always damaged first.

In the construction of dwelling houses much can be done toward reducing clothes moth trouble. This pest does not work or breed in the presence of light. In building homes if a small window were put in each clothes closet and storage space in the attic much of the clothes moth trouble would be over.

One of the best preventative measures is the thorough brushing (or beating) and sunning of susceptible materials. Two hours of hot sunlight will kill all stages of the clothes moths. Infested garments should be thoroughly brushed and sunned on both sides. This process is strongly recommended for winter articles that are being stored for the summer.

The method of storing uninfested susceptible articles is an important one in an infested dwelling. Boxes or bags lined with fresh tar paper makes a safe place in which to store such articles. Safe storage can be affected by placing articles in tight fitting wooden or cardboard boxes. All cracks on such boxes should be sealed by pasting strips of paper over them.

Of all the materials used to repell clothes moths in storage, napthalene is undoubtedly the best and one of the cheapest. It is fatal to all stages of the clothes moth, whether used in the form of balls or as flakes. When used it should be applied liberally, scattering it thoroughly through infested materials. Cedar chests and fresh cedar shavings are not wholly effective against this pest. These will kill the young larvae but not the older ones. Neither will they kill the eggs or the moths.

Infested articles can be easily and cheaply fumigated in boxes, trunks or chests. The material used for such fumigation is carbon bisulphid. The prodedure is as follows: Pack the infested materials loosely into the box

or chest. Place a shallow dish as a pie tin or a saucer on top of these folded articles and pour about an ounce of carbon bisulphid into it. Immediately close the box or chest and seal as tightly as possible. The carbon biculphid evaporates very rapidly, giving off a gas that is heavier than air. This settles down through the container killing all stages of the clothes moth. Carbon bisulphid gas is highly explosive. Because of this there should be no fire or smoking in the building in which fumigation is taking place. Carbon bisulphid is not effective when the temperature is below sixty-five degrees. All fumigation should be done in the summer time.

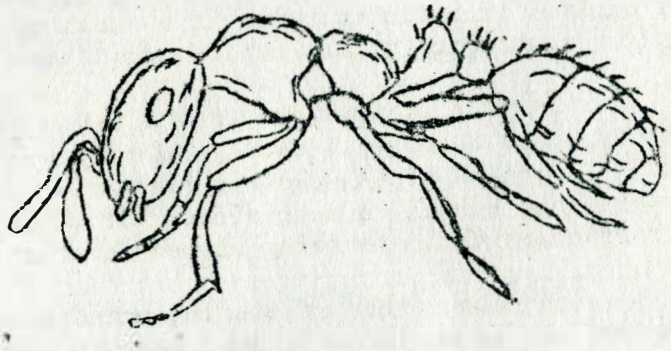
It is not our purpose to recommend or condemn commercial products which are constantly coming onto the market for the control of clothes moths. Some of them are worthless, but many do excellent work. One of the most successful is a product known as FLIT, put out by the Standard Oil Company. It is an oil and is applied as a fine fog through an atomizer which comes with the material. It is especially valuable in ridding infested closets of the pest.

There are probably more home remedies for clothes moths than for any other pest. Most of these so-called remedies are worthless. Among the ineffective ones are dusts of allspice, angelica root, black pepper, borax, cayenne pepper, eucalyptus leaves, hellebare, lime, quassis chips, salt, sodium bicarbonate, sodium carbonate, sulphur and tobacco. Formaldehyde as a spray or a fumigant is entirely unsatisfactory.

- HOUSE ANTS -

Ants are a constant nuisance to housewives in all parts of South Dakota during the summer months. There are several species of ants which cause trouble in dwellings. Most of these nest outside and enter houses only for the purpose of gathering food. Others are truly household ants, building their nests within the building.

If it is possible to locate the nest from which the ants are coming, it can be destroyed. Ant nests can be permanently broken up by fumigating with carbon bisulphid under a sealed tub or pail, or by drenching the nest with liberal amounts of boiling water.



House Ant
(greatly enlarged)

The most successful method of ridding the house of ants is by the use of repellant baits. The ants seem to shun these baits and after tasting them will leave the house, remaining away often for weeks. Ants have been known to be completely driven from the house within a few hours after this bait is put out. The repellant bait is so simple anyone can make and use it. Put a small amount of sodium arsenite (twice the size of a pea) in shallow containers in places frequented by ants. It must be remembered that ant colonies are not killed out by this bait, consequently reinfestation may occur, necessitating further application of the repellant bait. Attractive ant baits can be prepared which will kill out the nests but they are so complicated we are not including it in this circular.

It has been found that ants will not cross tape which has been soaked in a saturate solution of corrosive sublimate (murcuric chlorid). Such tape can be tacked around table legs, thus preventing ants from reaching food on the table. Shelves and cabinets and even rooms can be protected by properly placing the tape.

In a small amount of hot water, dissolve as much corrosive sublimate as the water will take up. This should be done only in porcelain or granite vessels, as this material will badly corrode metal. After the solution has cooled, filter by letting it seep through cotton batting placed in a glass funnel. The tape should then be soaked in this filtered solution and hung up to dry, after which it is ready to use. This tape will repel ants for many months without renewing. Corrosive sublimate is one of the most deadly poisons known. The greatest care should be used in the preparation of this repellant tape. This is especially true where there are children in the house.

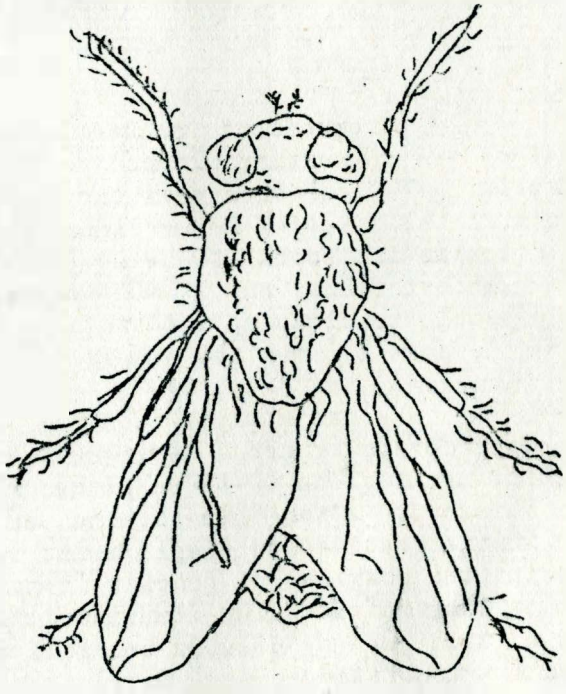
- HOUSE FLIES -

One of the most annoying and unsanitary household insects is the common house fly. It not only is troublesome from this standpoint but is definitely known to carry and spread disease, especially typhoid fever.

Everyone is familiar with the house fly so a description of the pest is not necessary. Most people are also familiar with the more common ways of combating this pest, namely by screening, trapping and entangling. Because of this our discussion on the control of this pest will include the lesser known methods which are cheap and entirely practical.

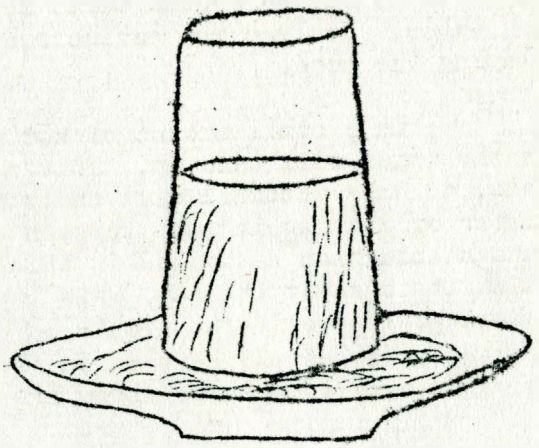
Perhaps the most effective means of killing flies is by poisoning. Of all the poisons one reads and hears about, ordinary formaldehyde is probably the cheapest and the best. A very effective poison can be made by diluting a cup of milk with a cup of water, sweetening with a little brown sugar and adding two tablespoons of ordinary commercial formaldehyde. This is very attractive and at the same time highly poisonous to flies. Care should be taken to put this poisoned solution in places not accessible to children.

The formaldehyde poison should be placed out in shallow containers such as pie tins or saucers. If a small piece of bread is placed in the solution it will be more attractive to flies.



The house fly.
(Greatly enlarged).

An effective self-feeding poisoner can be made as follows: Fill a glass tumbler full of the poisoned solution. Place a piece of blotting paper on a saucer, and invert over the tumbler. Hold the saucer down tightly and quickly turn the tumbler over. The solution will gradually feed out into the saucer as it evaporates.



Self feeding fly poisoner.

On the farm by far most of the flies breed in fresh horse manure. This fact can be capitalized in poisoning flies. Everyone knows that sweet materials are highly attractive to flies. Arsenic in almost any form is poisonous to this pest.

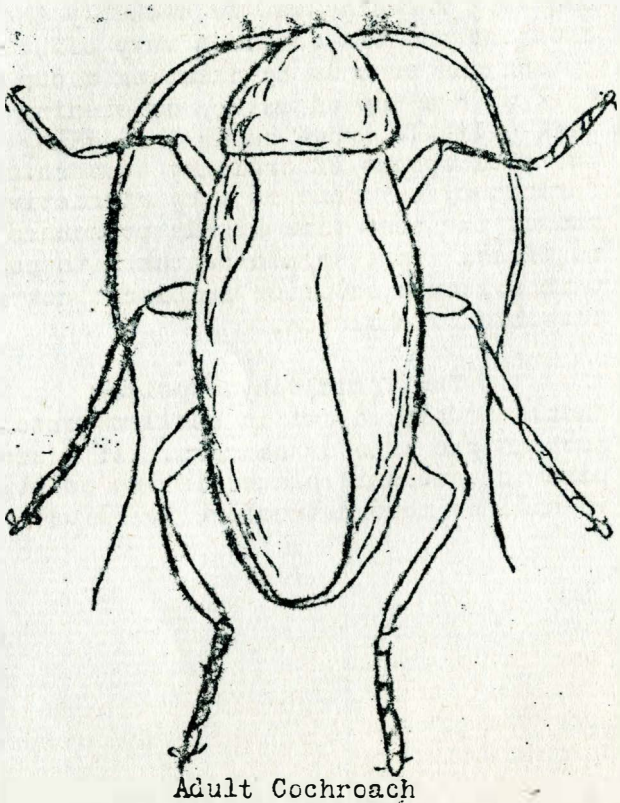
An effective fly poison is made by mixing lead arsenate, white arsenic or Paris Green into syrup. A tablespoon of the poison to each pint of syrup is enough. By painting or swabbing this poisoned syrup on the side of the barn nearest the manure pile, flies will be killed in enormous quantities.

Fly traps are very extensively used throughout the state but is has been found that part of the effectiveness of the traps is lost because of the wrong selection of baits. The most attractive bait for a fly trap is bread and milk, which has been slightly sweetened, preferably with brown sugar.

- COCKROACHES -

Cockroaches frequent only unclean and unsanitary places, yet it is surprising how common a pest they are in restaurants, bakeries and residences. It often is impossible to avoid cockroach infestations, but it most certainly is possible to clean up infestations before the pest becomes too numerous.

Before applying control measures for cockroaches it is necessary to thoroughly clean up those places which are infested. After this is done one of the most effective and simple means of ridding the premises of roaches is by the use of commercial sodium flouride. This can be used pure or diluted one-half with some inert substance, such as flour or air slacked lime. This material should be thoroughly dusted in all places frequented by roaches. The best results can be obtained by the use of a dust gun, as this will force the dust into cracks and crevices. If a dust gun is not available it can be dusted through a cheese cloth bag

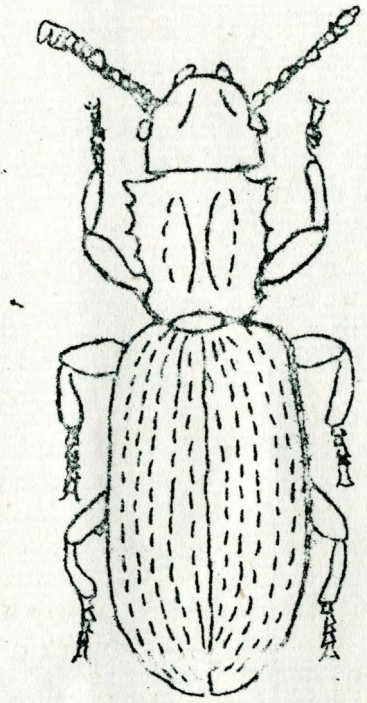


Adult Cochroach
(greatly enlarged)

or through an old salt shaker. This dust apparently is very annoying to the roaches, causing them to come out of their hiding places and rush more or less blindly about. In a few hours they become paralyzed and die. The dead and paralyzed roaches can then be quickly swept up and burned. This material has been known to effect complete extermination in heavily infested buildings in twenty-four hours' time.

- INSECTS INFESTING HOUSEHOLD CEREALS -

Every household is in constant danger of becoming infested with beetles or moths which work in household cereals, such as flour, corn flakes, rice, etc. These pests are brought into the house in flour or cereals and then multiply until they not only become a nuisance, but often completely ruin all cereal foods in the house. The beetles are very small (one-eighth inch long) reddish or brown beetles. The grain and meal moths closely resemble the clothes moth, but there is not such a heavy fringe around the wings.



Saw toothed grain beetle
(greatly enlarged)

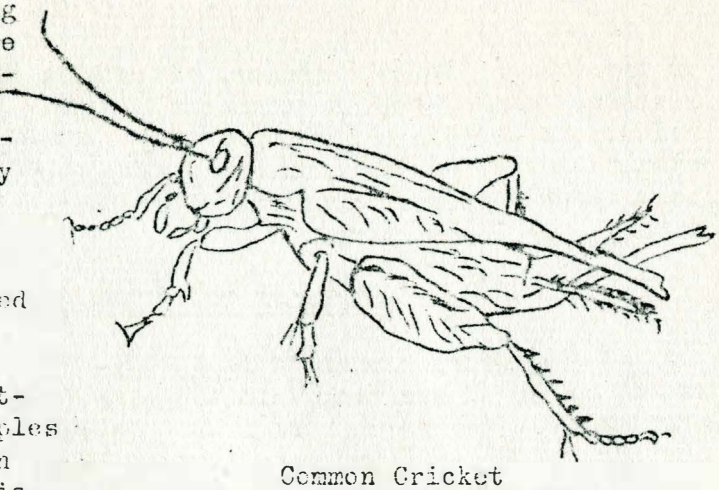
There are two methods of cleaning up these pests, namely by heat and by fumigation. Infested cereals which are heated to a temperature of one hundred and thirty-five degrees Farenheit for ten minutes are not injured in the least, yet this treatment kills all stages of the insect. The infested materials should be placed in large shallow containers and heated in the oven. An oven thermometer is necessary as too much heat will injure the cereal and too little will not kill the insects. After heating, as recommended above, materials like flour should be run through a fine sieve to remove the dead bodies of the insects, after which the flour can be used.

Infested cereals may be placed in large containers such as large cans with tight fitting lids and there fumigated with carbon bisulphid. Two ounces of carbon bisulphid is sufficient to fumigate the equivalent of one fifty pound sack of flour. The fumigation should be allowed to continue for at least eighteen hours. Remember that the fumes of carbon bisulphid are very explosive. Because of this no fires should be burning where used. It is effective only when the temperature is above sixty degrees Farenheit.

After ridding household cereals of insect pests as described above, it would be a serious mistake to place them back in the bin without first thoroughly cleaning it. Infested bins should be thoroughly drenched with boiling water. Do not use gasoline or kerosene as these products will taint food stuffs placed in the bin later. It is a good idea to paint the inside of bins with heavy white lead. This seals up all cracks thoroughly and prevents further reinfestations through these places.

- CRICKETS IN THE HOUSE -

Many inquiries regarding the control of crickets in the house are continually coming in. This insect has become a household pest in South Dakota that is not only a nuisance but has been known to actually ruin fabrics.

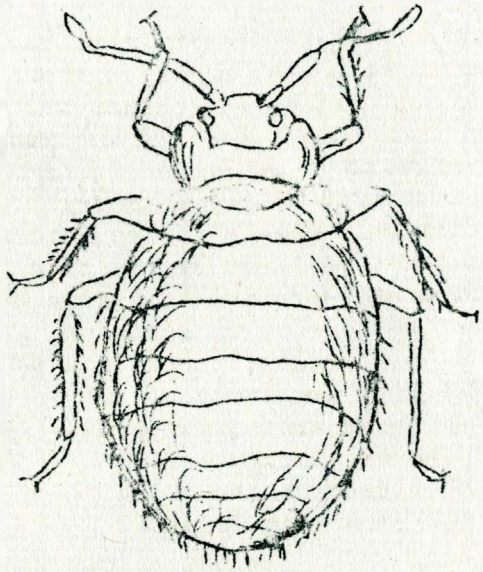


Common Cricket
(enlarged 4 times)

Crickets are very fond of cut green vegetables and sweetened liquids. These materials make good bodies for poisoned baits. One of the most simple baits is made by cutting up a few uncooked potatoes, apples or carrots, sprinkling the same with lead arsenate, white arsenic or Paris Green and placing them in the crickets' haunts. One must be careful in using bait of this kind that nothing else gets the bait.

- BED BUGS -

The repulsive bedbug is usually considered a mark of poor housekeeping. This is untrue for this pest often appears in the most carefully kept houses. Once having gained entrance into a home, the pest may presist for several years with only an occasional one being seen at long intervals. When it is realized that the bedbug may live for many weeks between meals one can readily see that a home may be infested without the knowledge of the family.



Adult Bed Bug
(greatly enlarged)

The best known method of controlling the bedbug is by fumigation with hydrajonic acid gas. Since this gas is one of the most deadly poisons known, persons who have had no experience with it should not use it.

Bedbugs may be killed with oils, but it is necessary for the oil to actually come in contact with the insect in order to kill it. Kerosene is better than gasoline. It should be forced into cracks and crevices in infested furniture, walls, behind wall paper, base boards, etc. Kerosene is apt to spot wall paper if used carelessly.

Corrosive sublimate (murcuric chloride) is effective against this pest. It can be used in water as a six percent solution, or it can be dusted as a powder. It should be applied to places in the house known to be infested with the pest. By forcing it into cracks and crevices better results will be obtained. Corrosive sublimate is a deadly poison, so great care should be exercised at all times while handling it.

- RATS AND MICE -

Mice and occasionally rat are almost a universal household pest in South Dakota. This is especially true in the fall of the year when these animals gain entrance to heated buildings in order to have a snug warm home for the winte

There are two means of combating these pests, namely by trapping and by poisoning. Under ordinary conditions, trapping when properly practised will free a house of mice in a reasonable length of time. As for rats, the house can usually be kept free from them if the barns are cleaned up before they start seeking heated quarters for the winter. Barns and other out buildings are best ridded of rats by poisoning.

In trapping mice the ordinary spring type trap is as good as any. The bait is probably more important than the trap. Two of the best baits for mice are cheese and uncooked bacon. It has been found that if these baits are slightly burned they seem to be more attractive to the animals and this gives better results. The baits may be easily and quickly burned as follows: First bait the trap and then hold it upside down and burn the bait with a match. It should be burned until the edges of the bait become blackened. Traps which have been used for considerable time should be occasionally boiled. This procedure eliminates all odor from the trap, which the animals often avoid. A half dozen traps circulated around the house and continually kept busy, will usually clean up the most severe mouse infestations.

Rats can best be controlled by poisoning. An indiscriminate use of poison around dwelling houses is not to be recommended because of the danger of the animals dying in unaccessible places. The use of barium carbonate as a poison, however, has done much to eliminate this danger. Rodents poisoned with barium carbonate apparently develop a ravenous desire for water. If all water in a building is kept from the rats and the doors and basement windows left open it is seldom that one will not find it's way outside to water before dying.

Barium carbonate is used as a rat poison as follows: Four parts of bait are used to one part of the poison. The bait and the poison are first thoroughly mixed and if dry a mash is made by adding water. A tablespoon of this bait is put in a place or two tablespoons if the bait is in the liquid form. Some of the most attractive baits that can be used with barium carbonate are chopped lean meat, sausage, fish, liver, bacon, egg, diced apple, tomato or melon rind, banana, cheese, cereals, peanut butter and sweet corn. If cheese is used it should be melted, the poison stirred in and then it should be allowed to cool and harden. The best results will be secured if an entirely new food, something the animals have not been in the habit of obtaining is placed before them. It is also a good idea to place all three kinds of baited foods before them at the same time, namely meats, succulent foods or cereals, allowing them to take their choic

Barium carbonate is not as poisonous to the higher animals as most of the other poisons. However, it is a poison and should be handled as such. It should be placed where nothing else can get at it. In poultry yards and houses the bait should be placed under boxes in which holes have been bored near the bottom.

Rats are extremely cunning and soon learn to shun baits that are poisoned. Because of this a large amount of bait should be used the first night in order to make as big a killing as possible before they learn that the baits are poisoned.